

Wales, and part of Lancashire; No. 4. East Lancashire and Yorkshire; No. 5. Midland; No. 6. South West; No. 7. South East, District of Widnes. From the Report it would appear that sulphate of ammonia works are being gradually but surely made innocuous through the persevering efforts of the Chief Inspector and his colleagues. In no case is sulphuretted hydrogen now allowed to escape mingled with carbonic acid from the sulphate tanks as of old, and the turning the gases into boiler-flues or the after-parts of fire-places at best only a process of conversion of one form of nuisance into another, is also being rapidly discontinued in favour of the direct condensation of the sulphuretted hydrogen in oxide of iron purifiers, by which the sulphur can be readily recovered and the oxide of iron regenerated for renewed use. (See pages 48, 49, 59, and 72, *loc. cit.*).

**A TREATISE ON THE MANUFACTURE OF SOAP AND CANDLES, LUBRICANTS AND GLYCERIN.** By WM. LANT CARPENTER, B.A., B.Sc., etc. With 87 illustrations. E. & F. N. Spon, 125 Strand, London. New York: 35 Murray Street. 1885.

This work, as the preface informs us, has in part appeared, though in a detailed manner, in Spon's "Encyclopædia of Manufactures and Raw Materials." In the present work the whole subject matter is rearranged and very carefully revised. The book contains 332 pages of subject matter, illustrated with 87 woodcuts, a table of contents, and an alphabetical index covering 12 pages. It is of medium 8vo size, and is bound in cloth. The work is subdivided into fifteen chapters treating of the various portions of the subject, these chapters being preceded by a "Historical Epitome and References." The writer of the present notice has himself seen and examined the remains of the old Pompeian soap factory referred to, with its lead-lined pans, each containing about 15 to 20 gallons. It forms one of the most interesting relics in the ruined city. He can thus bear full testimony to this interesting fact mentioned in Mr. Carpenter's "Historical Epitome." Chapter I. Theoretical Principles. Chapter II. Raw Materials: Their Sources and Preparation. Chapter III. Raw Materials: Refining, Clarifying and Bleaching. Chapter IV. Raw Materials: Their Proximate Analysis. Chapter V. Caustic Alkali, and other Mineral Salts. Chapter VI. Manufacture of Household Soaps: The Process of Saponification. Chapter VII. Treatment of Soap after its Removal from the Soap Copper: Household, Manufacturers', and Toilet Soaps. Chapter VIII. Theory of the Action of Soap—Its Valuation and Analysis: Distribution and Position of the Trade. Chapter IX. Lubricating Oils, Railway and Waggon Grease, etc. Chapter X. Candles: Raw Materials, their Sources and Preliminary Treatment. Chapter XI. Processes for the Conversion of Neutral Fats into Fatty Acids: The Manufacture of Commercial Stearin. Chapter XII. The Manufacture of Candles and Night-lights: Their values as Illuminants. Chapter XIII. Glycerin. Chapter XIV. Summary of Patents. Chapter XV. Bibliography.

## Monthly Patent List.

### ENGLISH APPLICATIONS.

1885.

#### I.—GENERAL PLANT, APPARATUS, AND MACHINERY.

8710 G. H. Raven, London. Improvements in or relating to smoke-consuming furnaces or fire-places. July 20  
8800 J. Jarvis, London. Improvements in retorts and seals therefor. Complete specification. July 22

8970 A. C. Hill, Middlesbrough. Improvements in regenerative hot-blast stoves for heating air, steam, or other gases. July 25

9201 D. K. Clark and W. J. E. Foakes, London. Improvements in filter-presses. July 31

9225 W. Weldon, Burston—Communicated by A. R. Pechiney et Cie., France. Improvements in apparatus for heating solid substances out of contact with the products of the combustion of the fuel employed. August 1

9231 H. W. Todd, Liverpool. Improvements in metallic drums for containing chemical and other substances. Aug. 1

9275 J. Ruscoe, Manchester. Improvements in machines for facing the ends of, and turning or boring gas-retort mouths, lids, pipes, or valves of D, oval, or any other shape or section than round; also for cutting oval-shaped holes in boiler and other plates, castings, and the like. August 1

9298 A. H. W. Brown, London. Improvements in means for economising fuel and consuming smoke in steam boilers. August 4

9316 W. L. Wise, London—Communicated by J. G. Hansel and F. L. Krumblegel, Saxony. Improvements in furnaces. August 4

9338 W. A. Martin, London. An improved mode of developing and increasing the draught of furnaces. August 5

9387 W. Thomlinson, London. Improvements in stoves for heating the blast for blast furnaces, or for other analogous purposes requiring hot blast. August 6

9416 J. G. Betts, London. Improvements in apparatus for heating or cooling air for drying or for other purposes. August 7

9437 W. W. Nightingale, London. Improvements in means or apparatus for forming and maintaining ice surfaces, and treating the atmosphere of glaciers or such like places, and for cooling chambers. August 7

9446 W. G. Hudson and C. H. Bonne, Manchester. An improved apparatus for carburetting atmospheric air and other gases. August 8

#### II.—FUEL, GAS, AND LIGHT.

8669 F. Siemens, London. An improvement in gas-producers. July 17

8745 S. A. Sadler, London. Improvements in means and apparatus for utilising mineral, tar, and other oils as fuel. July 20

8816 P. Jensen, London—Communicated by J. E. Dery, Belgium. Improvements in or in connection with apparatus for the carburation of gas in railway and other carriage lamps and lanterns. Complete specification. July 21

8880 J. Hanson, Bingley. Improvements in the construction or arrangement of hydraulic mains and ascension pipes, connected therewith for the manufacture of coal gas. July 23

8892 J. Bromilow, Liverpool. Improvements in apparatus for the application of gases to metallurgical and other purposes requiring high temperatures. July 23

9089 F. L. Harris, London. Improvements in gas batteries for the production of electric currents. July 28

9203 J. Robbins, London. An improved artificial fuel. July 31

9302 A. R. Upward and C. W. Pridham, London. Improvements in gas batteries. August 4

9365 H. Baker, Derby. Lighting by coal gas, houses, streets, etc., by which a much greater lighting power is obtained from the gas. August 6

9511 R. Dempster, Jun., Manchester. Improvements in centre valves employed in connection with gas purifiers. Complete specification. August 11

9513 H. E. A. Wallis and H. T. Ratcliff, London. An improved arrangement or means for effecting direct conduction of gas-flame heat to hydrocarbon for enriching the flame and increasing light. August 11

9591 J. McCulloch and W. Black, Glasgow. Improvements in machinery for preparing and compressing materials for use as fuel or for smelting purposes. August 12

9650 H. E. A. Wallis and H. T. Ratcliff, London. Improved construction of carburetting apparatus for burning coal gas with hydrocarbons. August 13

9679 H. J. Rogers, Watford. Improvements in gas retorts, and in apparatus connected therewith. August 14

9701 N. J. Holmes, Sevenoaks. Improvements in the construction of self-igniting and inextinguishable signal lights for marine and other purposes. August 14

9720 B. Andreac, Halifax. Improvements in the generation of gas for light and heat purposes, and the necessary apparatus thereto. August 15

9725 R. W. Anderson, Liverpool. A new and improved means of economising coal, consuming smoke, and raising the heat to a higher degree in the furnaces of steam boilers. August 15

9761 J. J. Barclay and J. Thompson, London. Improvements in gas producers and apparatus for supplying gas to marine and stationary steam-boiler and other furnaces. August 17

#### III.—DESTRUCTIVE DISTILLATION, TAR PRODUCTS, ETC.

8973 L. Mond, Liverpool. Improvements in or incidental to the separation of ammoniacal products and tar from producer or other furnace gases. July 25

9110 H. de Solderhoff, London. A continuous arrangement of regenerating apparatus for coke-ovens. July 29

9611 A. A. Vale, London.—Communicated by the Chemische Fabriks Actien Gesellschaft, Germany. Treatment of the waste acids resulting from the purification of the light oils of conlar for the utilisation of the said waste acids, and of the by-products resulting therefrom. August 12

#### IV.—COLOURING MATTERS AND DYES.

9211 M. Hoffmann and A. Weinberg, London. The production of new azo colours. July 31  
9510 H. J. Haddan, London.—Communicated by The Farbenfabriken, vorm. Bayer & Co., Germany. A new manufacture of violet and blue azo-dyes. August 10  
9691 G. M. Snow Horton, London.—Communicated by Root and Tinker, United States. Recovering the excess of sulphuric anhydride used in the manufacture of certain dyes, etc. August 11

#### V.—TEXTILES: COTTON, WOOL, SILK, ETC.

8793 W. Mather, London. Apparatus for treating textile materials with liquids, gases, or vapours. July 21  
8794 W. Mather, London. A process for bleaching vegetable textile fabrics. July 21  
8795 C. D. Abel, London.—Communicated by La Société Dubus, Cojet, et Cie, France. Process for the removal of vegetable impurities from wool by chemical means in combination with steam. July 21  
8890 J. C. Siegelist, Manchester.—Partly communicated by E. Mittler, France. A new or improved process of treating and weighting silk. July 23  
9129 A. M. Clarke, London.—Communicated by J. Haug, France. An improved machine for decorticating ramie and other similar fibrous plants. July 29  
9377 C. Court, S. Hersee, H. C. Williams, and S. Hersee, London. Improvements in treating all vegetable substances for the production of fibre for use for spinning purposes and for the manufacture of paper pulp. August 6

#### VI.—DYEING, CALICO PRINTING, PAPER STAINING, AND BLEACHING.

9197 H. J. Haddan, London.—Communicated by E. Haefely, France. Improved process for dyeing cotton yarn. July 31  
9690 T. Salt and W. Stead, London.—Communicated by F. Pasquay, Germany. Improvements in apparatus for washing, scouring, bleaching, dyeing, steaming, drying, and otherwise treating fibrous material in the form of silvers, slubbings, rovings, yarns, or fabrics. August 11

#### VII.—ACIDS, ALKALIS, AND SALTS.

8692 F. Foster, London. Generating carbonic acid gas automatically. July 18  
8723 W. P. Thompson, Liverpool.—Communicated by Solvay et Cie., Belgium. Improvements in filters applicable for caustic soda solution. July 20  
8721 W. P. Thompson, Liverpool.—Communicated by Solvay et Cie., Belgium. Improvements in the manufacture of chlorine from by-products of the ammonia-soda process, or similar chemicals obtained from other sources. July 20  
8838 W. P. Thompson, Liverpool.—Communicated by J. Weeren and F. Weeren, Germany. A new or improved process for obtaining silicates of the alkalis and alkaline earths from the corresponding sulphates, together with sulphurous acid or sulphur, and apparatus therefor. Complete specification. July 22  
8916 C. F. Claus, jun., London. Improvements in the process of obtaining phosphoric acid and alumina from Redondo and similar phosphates of alumina. July 23  
8923 F. Brünjes, London. An improved process for the production of carbonate of potassium from chloride of potassium or sulphate of potassium. July 25  
9225 W. Weldon, Hurstow.—Communicated by A. R. Pechiney et Cie, France. Improvements in apparatus for heating solid substances out of contact with the products of the combustion of the fuel employed. August 1  
9227 W. Weldon, Hurstow.—Communicated by A. R. Pechiney et Cie, France. Improvements in and relating to the decomposition by means of magnesia of the residual ammonium chloride of the ammonia-soda process. August 1  
9125 F. J. P. Chesbrough, Liverpool.—Communicated by J. Hawliczek, Austria. An improved method of manufacturing soda crystals and caustic soda direct from the bicarbonate resulting from the ammonia-soda process, and recovery of ammonia and carbonic acid, and apparatus employed therefor. August 7  
9616 G. Krüger, London. Recuperation and utilisation of the alcohol and acetic acid lost by evaporation in the manufacture of vinegar. August 13  
9691 G. M. Snow Horton, London.—Communicated by Root and Tinker, United States. Recovering the excess of sulphuric anhydride used in the manufacture of certain dyes, etc. August 11

#### VIII.—GLASS, POTTERY, AND EARTHENWARE.

9390 J. Bevington, London. An improved method for the drying or hardening-on of printed earthenware in biscuit state. August 6  
9122 W. V. Boulton, London. Improvements in decorating glass with acidified air-chambers. August 7

#### IX.—BUILDING MATERIALS, CLAYS, MORTARS, AND CEMENTS.

8730 D. Crossley, Halifax. Improvements in the manufacture of bricks, which are thereby rendered porous or cellular. Complete specification. July 20  
8736 H. W. Merritt, Somerville, Massachusetts, U.S. Improvements in plastic compounds. Complete specification. July 20  
8871 R. Stanley, London. An improved method of preparing and burning bricks, tiles and the like. July 22  
8989 O. Hertrampf, London. Improvements in brick-kilns. Complete specification. July 25  
9017 J. H. Wood, London. Improvements in ovens for drying slurry, and other similar substances. July 27  
9087 A. W. J. Iteddio, London.—Communicated by T. Eggleston, United States. Improvements in the method of and compounds for preserving stone. Complete specification. July 28  
9151 W. Joy, London. Improvements in the manufacture of cement. July 30  
9222 A. T. Fullicks, London. Improvements in the manufacture of blocks and slabs for structural and ornamental purposes. July 31  
9322 C. J. Howe, London. Improvements in the manufacture of Isceno's cement. August 1  
9561 A. Wilkinson, London. An improved construction of ventilating brick. August 11  
9620 H. W. Taynton, London. An improved process for seasoning timber. August 13  
9633 F. Boyes, East Hartlepool. The making of bricks, called lubricating brick die. August 13  
9730 W. O. Wood, London. Improved compounds for the manufacture of furnace bricks and linings, and for making converter bottoms in one piece, tuyeres, and the like. August 15  
9731 W. B. Westlake, London. Improvements in machinery or apparatus for the manufacture of artificial fuel, bricks, and the like, and in preparing materials for the same. August 15

#### X.—METALLURGY, MINING, ETC.

8651 D. Rose, W. N. Rose, and A. T. F. Rose, London. Means for utilising wrought iron and steel scrap in the formation of piles to be rolled into finished iron and steel. July 17  
8661 W. Wood and M. H. Hurrell, London. Improvements in apparatus for refining copper and other metallic matters by electrolytic and chemical actions. Complete specification. July 17  
8677 J. Riley, Glasgow. Improvements in the manufacture of steel in regenerative open-hearth furnaces. July 18  
8693 J. A. Longridge, London. Improvements in the construction of ordnance. July 18  
8756 H. White, London. Improvements in the manufacture of steel and iron, and in converters to be used in such manufacture. July 20  
8765 J. Davis, Aberystwith. An improved method for separating or dressing metalliferous ores. July 21  
8819 W. R. Lake, London.—Communicated by W. H. Purdy, United States. Improvements in and relating to the purification of iron and steel. Complete specification. July 21  
8906 H. W. Hollis, London. Improvements in and connected with the rolling and forging of metals. July 23  
8935 W. H. Duncan, Coulbrookdale. Extracting, washing, and delivering gold, silver, diamonds, lead, and other metals. July 25  
8931 T. Hampton and J. Facer, Manchester. Improvements in the method of casting steel ingots. July 25  
9116 J. B. Thompson and W. White, London. Improvements in the production of aluminium from its salts, and apparatus for the purpose. July 30  
9169 H. Hall, London. Improvements in the mode of coating metal plates or sheets with tin, lead, or other metals or alloys of the same, and in apparatus to be employed therein. Complete specification. July 31  
9317 H. W. Taynton, London. Improvements in the manufacture of oil baths for toughening steel. August 5  
9351 E. Grooters, London.—Communicated by L. Grooters, Belgium. Improvements in kilns or furnaces for smelting copper and other ores at one operation. August 5  
9178 H. H. Lake, London.—Communicated by P. A. Verges, France. Improvements relating to the separation or recovery of tin from scraps of tinned plate. August 8  
9198 F. P. y Pablos, Paris. Improvements in furnaces for melting. Complete specification. August 10  
9536 H. J. Haddan, London.—Communicated by E. Phillips and T. Jones, United States. Improvements in the preparation of the charge for zinc furnaces. Complete specification. August 11

#### XI.—FATS, OILS, AND SOAP MANUFACTURE.

9162 A. Domoler and B. Nickels, jun., London. Improvements in the preparation of oils for burning in lamps. July 30  
9352 M. Bauer, London.—Communicated by J. Morz, Austria. Improvements in extracting fat and other substances from dissolvable materials, and in apparatus therefor. August 5  
9380 P. A. Newton, London.—Communicated by S. Hornemann, Germany. An improved process for preserving crude animal fats. August 6

9193 C. Benson and J. W. Garrett, Kingston-upon-Hull. Improving wrappers or envelopes used for extracting oil from seed in the manufacture of cake. August 10  
9073 C. Humble and F. Sear, Battersen. Improvements in soap making. August 13

## XII.—PAINTS, VARNISHES, AND RESINS.

8737 W. R. Lake—Communicated by J. P. Perkins, United States. An improved paint or pigment. July 20  
9111 W. Macrone, London. Improvements in the manufacture of dry colours. Complete specification. August 7  
9119 T. Harrison, London. Coating the insides or outsides of iron and steel ships, barges, and all and every description of iron and steel vessels, girders, tanks, etc., where the preservation of iron, steel, or any other metal is desirable. August 7

## XIII.—TANNING, LEATHER, GLUE, AND SIZE.

8728 W. J. Goulborne and E. Morse, London. Compressed leather. July 20  
8963 M. Zingler, London. Improved substitutes for leather applicable for driving belts, boot and shoe soles, covering machine rollers, and other uses. July 21  
9259 T. Laycock and J. Owen, London. Waterproofing leather. August 1  
9113 W. Macrone, London. A new or improved varnish or size. Complete specification. August 7  
9003 L. A. Groth, London—Communicated by F. W. Gröne, Germany. A new or improved method of preparing elastic leather and elastic material (suitable for moulding) from animal textures or leather containing gelatine. August 12  
9000 T. N. Ashman, London. Improvements in the method of and composition for treating leather and leather articles. August 13

## XV.—SUGAR, STARCH, GUM, Etc.

8786 H. J. Allison, London—Communicated by A. G. Day, United States. Improvements in vulcanised kerite compounds and in processes for the manufacture of the same. Complete specification. July 21  
8787 H. J. Allison, London—Communicated by A. G. Day. Improvements in vulcanised kerite compounds and in processes for the manufacture of the same. Complete specification. July 21  
8913 G. M. Newhall and J. H. Tucker, London. Improvements in treating sugar and like substances and in apparatus therefor. Complete specification. July 22  
8857 C. Lyle and J. Lyle, London. Improvements in apparatus for cleansing sugar.  
8921 A. Italu, jun., J. Grathwohl, and H. A. Browne, London. Improvements in preparing and treating syrups and molasses, especially those of sorgho and sugar cane, by mixing them with substances adapted for distillation, and in the manufacture of spirit therefrom. July 23  
9219 A. G. Wass, London. The improved utilisation of sugar scum. August 1  
9326 W. R. Lake, London—Communicated by F. O. Mathiesens, United States. Improvements in the manufacture of hard sugar. Complete specification. August 1  
9313 W. H. Schwartz, London. Improvements in the manufacture of sugar. August 5

## XVI.—BREWING, WINES, SPIRITS, Etc.

8632 G. F. Redfern—Communicated by C. Völekner, Austria. Improvements in malting houses. Complete specification. July 17  
8810 G. Brownen, London. The preparation of extracts and beverages from the leaves of the coca plant. July 21  
8908 J. J. W. Peters, London. An improved process of purifying yeast. July 21  
8925 A. Italu, jun., J. Grathwohl, and H. A. Browne, London. Improvements in the preparation and treatment of sweet potatoes, yams, and arums, and the manufacture of spirit from those vegetable substances. July 23  
8957 J. Pacey, London. Improvements in finings-making machines. July 21  
8994 F. Springmühl, London. Method of preparing "hopene," the narcotic principle of hops. July 25  
9098 H. C. Sinclair and J. Hodson, London. Apparatus for effecting the turning of malt or other grain on the drying floors of kilns. July 29  
9207 J. Challenger, London. An improved apparatus for automatically aerating malt and other liquors. July 31  
9106 T. D. Harries, Aberystwith. A beverage called lacturine or aerated whey. August 7  
9331 W. Duckworth, Hullfax. An improved compound to be employed for flavouring and preserving syrup cordials and aerated beverages. August 11  
9359 B. J. B. Mills, London—Communicated by A. J. Reynolds, United States. Improvements in malt-stirring machines. August 11

## XVII.—CHEMISTRY OF FOODS, SANITARY CHEMISTRY, DISINFECTANTS, Etc.

8600 C. Jones, London. Improvements in or connected with furnaces for treating town refuse. July 18  
8912 J. B. Spence, London. Improvements in the treatment of sewage, at or near the outfall. July 23

8909 F. G. Broxholm, London. The manufacture of an improved antiseptic compound. July 25  
9053 C. H. Sharman, London. A new process or method for preserving all kinds of vegetable products. July 28  
9170 J. McKerlie, Edinburgh. Ripening and purifying milk. July 31  
9231 M. Coulson, Spennymoor. Improvements in apparatus for heating, purifying, and softening water for boilers. August 1  
9216 E. Whittier, London. Improvements in apparatus for preserving articles of food. August 1  
9263 W. Priestley, Wigan. Improvements in sewage lining machines, and for machines to be used for similar purposes. August 4  
9339 J. Cowan, London. Softening and purifying water. August 5  
9311 E. B. Watson and H. B. Fulton, London. Preparation and application of improved hygienic and disinfecting substances, for use as candles, night-lights, tapers, and such like, or as external remedies. Complete specification. August 5  
9353 W. R. Lake, London—Communicated by M. R. Garcia, France. An improved disinfectant. August 5  
9392 J. Bock, London. Improvements in the purification of sewage waters and the like, and the recovery of valuable products therefrom. August 6  
9186 W. D. Borland, Stowmarket. Improvements in the application of disinfectants. August 10  
9351 W. Gunn, London—Communicated by the Coal Economising Co., United States. A new or improved compound for the prevention of smoke in furnaces and other fire-places. August 11  
9612 C. D. Abel, London—Communicated by C. Linde, Germany. An improvement in the manufacture of ice. Aug. 12

## XVIII.—ELECTRO-CHEMISTRY.

8651 W. Wood and M. H. Hurrell, London. Improvements in apparatus for refining copper and other metallic matters by electrolytic and chemical actions. Complete specification. July 17  
8808 W. B. Nation, London. Improvements in the application of electricity to the treatment of vegetable fibre for the production of half stuff and other purposes. July 21  
9390 A. Muirhead and C. M. A. Wright, London. Improvements in the preparation and production of insulating compounds for electrical purposes. August 12  
9358 H. J. Hadden, London—Communicated by A. Z. Champy, N. G. A. Champy, and L. P. G. Champy, Belgium. Method and apparatus for purifying, separating or decomposing liquids by means of electrolysis. August 17

## XIX.—PAPER, PASTEBOARD, Etc.

8611 R. F. Dorendorff, London—Communicated by M. Krause, Germany. A process of inserting (during the making of paper, cards, etc.) natural grasses, mosses, ferns, leaves, flowers, or any other decoration suitable. July 17  
8685 J. P. Cornett, South Hyllon. Trimming the edges of paper or pulp by means of a jet of water or other fluids, named in the complete specification a hydraulic pulp edge trimmer. Complete specification. July 18  
8760 S. S. Sugden, Woodford. Improvements in the manufacture of cigarette papers. July 21  
8955 G. Newsum, London. A machine for varnishing and printing paper. July 21  
9112 R. F. Dorendorff, London—Communicated by M. Krause, Germany. Velvet paper for writing and other purposes. July 29  
9319 H. W. Morrow, London. Improvements in the treatment of paper and other fibrous material. Complete specification. August 1  
9111 W. Macrone, London. Improvements in waterproofing paper and other fabrics, and in machinery therefor. Complete specification. August 7  
9112 W. Macrone, London. Machinery for varnishing or sizing and applying colours to paper and other fabrics. Complete specification. August 7

## XXI.—EXPLOSIVES, MATCHES, Etc.

8951 D. Johnson, London. Improvements in the manufacture of explosives. July 21  
9002 J. Mitchell and J. Sinclair, London. An improved cartridge, chiefly designed for use in mines. July 25  
9003 J. Mitchell and J. Sinclair, London. Improved apparatus for limiting the effects or extent of explosions and fires in mines or other places. July 25  
9022 H. E. Newton, London—Communicated by A. Nobel, France. An improved receptacle for hygroscopic explosives. Complete specification. July 27  
9023 H. E. Newton—Communicated by A. Nobel. Improvements in the manufacture of explosive compounds. July 27  
9125 P. A. Newton, London—Communicated by A. Nobel, France. Improvements in the manufacture and use of explosive substances. July 29  
9126 P. A. Newton, London—Communicated by A. Nobel. Improvements in the manufacture and use of explosive compounds. July 29

## ENGLISH PATENTS PUBLISHED.\*

APPLIED FOR DURING 1884 AND 1885.

## I.—GENERAL PLANT, APPARATUS, AND MACHINERY.

1881.

11880 F. G. Riley. Apparatus for carbonating liquids or semi-fluids. 8d

1885.

6166 H. J. Hadden—Communicated by J. W. Brightman. Improvements in furnaces. 8d

## II.—FUEL, GAS, AND LIGHT.

1881.

11987 G. T. Beilby. Separating solid paraffin from oils. 6d  
 12990 J. Inray—Communicated by H. de Bay and C. de Rossetti. Apparatus for combustion of liquid fuel. 6d  
 13116 G. T. Beilby. Purifying paraffin oils. 4d  
 11168 C. Thompson and C. Hammond. Manufacture of "Virgin gas" for lighting, heating, and other purposes. 6d

1885.

805 A. J. Boulton—Communicated by J. Hanlon. Manufacture of gas for illuminating or other purposes, and apparatus therefor. 10d

1081 J. Reid. The revivification of hydrate of lime after it has been used once for the purification of gas. 4d

REPRINTS.

2071 (1853) P. A. Moreau—le Comte de Fontaine. Combustion of carbon in gas and other lights. 6d

1116 (1880) P. Jensen—Communicated by — Brin. Production of oxygen and nitrogen gas. 6d

1133 (1880) J. Alexander and A. K. McCosh. Separating condensable matters from combustible gases. 6d

3785 (1881) J. Alexander and A. K. McCosh. Obtaining products from blast furnace and other combustible gases. 6d

## III.—DESTRUCTIVE DISTILLATION, TAR PRODUCTS, Etc.

1881.

11250 J. Dempster. Method and apparatus for extracting tar and ammonia from the gases of blast furnaces. 6d

11967 H. de Solderhoff. Apparatus employed in the treatment of coal in order to obtain coke and by-products therefrom. 6d

12286 P. Dow. Retorts for distilling shale, coal and other substances. 6d

12310 H. Simon. An improvement in coke ovens. 2d

12379 C. Kingsford. Apparatus for utilising the waste heat from coke ovens, or other furnaces for evaporating, calcining, etc. 6d

12651 C. E. Bell. Treatment of oils and tars obtained from blast furnaces and gas producers for the production of valuable hydrocarbons therefrom. 4d

## IV.—COLOURING MATTERS AND DYES.

1885.

2266 H. J. Hadden—Communicated by E. Frank and the Farbenfabriken vormals Bayer &amp; Co. Process for the production of soluble combinations of certain azo compounds with bisulphites, and for utilising the same in dyeing and printing. 2d

7630 C. E. Avery. Improved manufacture of extracts and liquors of logwood. 4d

## V.—TEXTILES, COTTON, WOOL, SILK, Etc.

1881.

15923 N. A. Alexanderson. Method of rendering cloth, wool, paper, etc., waterproof but not air-tight. 4d

1885.

6922 W. W. Hamilton. Treating animal and vegetable fibres for textiles, cordage and other uses. 4d

6923 W. W. Hamilton. Treating animal and vegetable fibres for textiles, cordage and other uses. 4d

## VI.—DYEING, CALICO PRINTING, PAPER STAINING, AND BLEACHING.

1881.

12385 W. Clark—Communicated by E. A. D. Guichard. Process and apparatus for bleaching waste paper, whether printed or written on. 6d

\*Any of these specifications may be obtained by post, by remitting the cost price, plus postage, to Mr. H. Reader Luck, Comptroller of the Patent Office, Southampton Buildings, Chancery Lane, London, W.C. The amount of postage may be calculated as follows:—

|                                           |     |
|-------------------------------------------|-----|
| If the price does not exceed 8d. ....     | 4d. |
| Above 8d., and not exceeding 1s. 6d. .... | 1d. |
| " 1s. 6d., " " 2s. 4d. ....               | 4d. |
| " 2s. 4d., " " 3s. 4d. ....               | 2d. |

12172 C. R. Preibisch. Dyeing fabrics aniline black, and apparatus therefor. 6d  
 13211 J. Dawson and G. W. Oldham. Dyeing silk and woollen fibres with insoluble azo-colouring matters. 4d

## VII.—ACIDS, ALKALIS, AND SALTS.

1881.

11035 W. Weldon—Communicated by A. R. Pechiney &amp; Co., Salindres, France. Manufacture of chlorine and hydrochloric acid. 4d

11036 W. Weldon—Communicated by A. R. Pechiney &amp; Co., Salindres. Manufacturing chlorine from hydrochloric acid. 4d

11119 W. R. Lako—Communicated by C. Brison, Maçon. Method and apparatus for distilling urine and other substances containing nitrogen. 6d

11711 A. Feldmann, London. Improvements in the process of manufacturing ammonia. 4d

11775 H. Gaskell, jun. Purification of bicarbonate of soda, and apparatus therefor. 6d

11805 P. M. Justice—Communicated by S. G. Thomas. Manufacture of phosphates. 4d

12211 W. L. Wise—Communicated by Solvay &amp; Co. Obtaining hydrochloric acid gas from a solution of hydrochloric acid. 4d

1885.

381 E. W. Parnell and J. Simpson. Improvements in the utilisation of alkali waste from the Leblanc process in the manufacture of carbonate of soda, with production of sulphuretted hydrogen. 6d

1937 E. W. Parnell and J. Simpson. The recovery of ammonia in the manufacture of carbonate of soda by the ammonia process, with production of sulphuretted hydrogen. 4d

6127 C. A. Bartsch. Stills for containing sulphuric acid. 6d

6131 J. H. Johnson—Communicated by Dr. F. von Heyden. Process for the manufacture of naphthol carbonic alkaline salts. 2d

6101 E. Hanisch and M. Schroeder. Obtaining sulphur from furnace gases. 6d

6105 E. Hanisch and M. Schroeder. Obtaining liquid anhydrous sulphurous acid from furnace and other gases. 4d

## IX.—BUILDING MATERIALS, CLAYS, MORTARS, AND CEMENTS.

1881.

12097 T. MacLaren. A composite paving block. 4d

12216 F. Wilkins. Improvements in asphaltic pavement. 2d

12125 H. Kottmann. Process for the manufacture of asphalt. 4d

12186 T. Freeman, jun., and C. Eardley. Machinery for and method of manufacturing hollow bricks and other hollow clay or plastic building materials. 4d

12765 W. Day. Kilns for burning bricks and other articles. 6d

13335 W. Smith. Manufacture of waterproof cement. 2d

13380 J. J. Barclay, H. Allison, and J. Barclay. Kilns and apparatus for drying and burning bricks. 8d

11328 C. Thompson. An improved form in bricks for the construction of furnaces, stoves, kilns, etc. 6d

1885.

301 J. Foulds and S. Tomlinson. Crushing and reducing to powder stone, or other hard material. 6d

2927 W. Millar and C. P. Nichols. A new or improved fibrous, fireproof, and waterproof composition for constructive, decorative, and other purposes. 2d

6027 J. Tulloch and T. Tulloch. The construction of fireproof buildings. 6d

7118 C. A. Wilkes and W. Millar. Metallic compound for flooring, paving and other purposes. 2d

## X.—METALLURGY, MINING, Etc.

1881.

11170 A. E. Scott. Extraction of metals from carbon, or substances known as such, and treatment of products arising therefrom. 4d

11809 C. J. Ball. Means and apparatus for separating diamonds, gold, tin, and other minerals from earthy and other matters. 6d

12317 G. I. J. Wells. Treatment of complex ores or solutions. 4d

12171 J. P. Roe. Apparatus for the distribution of gas and air in regenerative steel-melting, glass-melting, and other furnaces. 6d

12393 T. Barnard. The economical concentration of ores, minerals, and metallic substances. 6d

12687 J. Riley. Process and apparatus for making steel with open-hearth furnaces. 6d

12725 E. Marchese. Process for electrolytic extraction of copper from its ores. 4d

12793 H. Campbell—Communicated by W. W. Ker. Compound applicable for welding iron and steel, purifying and strengthening cast iron, restoring burnt steel, and imparting to Bessemer steel qualities which enable it to be tempered like cast steel. 4d

12876 C. Cheswright—Partly communicated by H. Cheswright, Bordeaux. Laminating metals, and apparatus employed therein. 6d  
 12930 G. W. Moon. The amalgamation of gold and silver with quicksilver. 6d  
 13131 P. M. Justice—Communicated by L. E. Thomas, Paris. An improvement in the manufacture of steel. 2d  
 13126 T. Nordenfelt—Communicated by C. G. Wittenström, E. Faustman and P. Osberg. Furnaces for melting metals in crucibles. 6d  
 11252 C. M. Pielsticker—Partly communicated by F. C. G. Müller. Production of steel (and other metal) wire, plates, rods, bars, etc.; and apparatus connected therewith. 6d  
 14264 T. Pitt—Communicated by A. Rollet. Manufacture of iron and steel by the employment of a purified metal. 6d  
 16117 W. Rose. The fabrication or compounding of iron and steel for various purposes. 1s

1885.

3386 N. C. Cookson. Smelting sulphide of antimony. 4d  
 6121 J. R. Griffin. Method of and apparatus for reducing ores. 6d  
 6129 W. R. Lake—Communicated by C. J. Eames. Manufacture of iron sponge, iron, and steel; and apparatus therefor. 6d  
 6130 W. R. Lake—Communicated by C. J. Eames. Manufacture of iron sponge, iron, and steel. 4d  
 6131 W. R. Lake—Communicated by C. J. Eames. Manufacture of iron sponge, iron, and steel. 4d  
 6389 A. Greiner and T. Erpf. Method of and apparatus for smelting iron. 4d  
 6991 W. P. Thompson—Communicated by E. H. Cowles and A. H. Cowles. Smelting ores by an electric current, and furnaces or apparatus therefor. 6d  
 7011 H. J. Allison—Communicated by the Compressed Steel Co. Manufacture of steel ingots. 6d

## REPRINTS.

4117 (1879) J. Alexander and A. K. McCosh. Utilising the gases of blast-furnaces. 8d

## XI.—FATS, OILS, AND SOAP MANUFACTURE.

1881.

12841 C. Harrison. Improvements in the manufacture of soap. 2d  
 13013 J. Swallow. Preparation of mineral oils for woollen manufacturing and other purposes. 2d

## XII.—PAINTS, VARNISHES, AND RESINS.

1881.

9803 Sir S. J. Blane, Bart. Treating white peats (or Kieselguhr) and blast-furnace slag, for production of an agent or material for combining with paints, varnishes, and other materials, to render them fireproof and impervious to moisture. 4d  
 12653 F. Maxwell-Lyte. Manufacture of antifouling paints for submerged structures. 4d  
 13192 A. French and J. Ballantyne Hannay. Improvements in making white and other lead pigments, and in apparatus therefor. 6d

1885.

7193 H. H. Lake—Communicated by S. Roebuck. Composition or paint for coating brickwork, ironwork, and the bottoms of ships, etc. 2d

## XIII.—TANNING, LEATHER, GLUE, AND SIZE.

1881.

12135 W. Clark—Communicated by E. Hermann. Improvements in tanning skins, and in the manufacture of compounds therefor. 4d  
 13967 W. Warwick. Manufacture of leather. 6d

1885.

7561 W. Paul. Machinery for boarding, softening, and graining leather. 4d

## XV.—SUGAR, STARCH, GUM, ETC.

1881.

12169 A. Fesca. Manufacture of sugar and apparatus therefor. 6d

1885.

6132 W. R. Lake—Communicated by F. O. Matthiessen. Manufacture of sugar, and apparatus therefor. 6d  
 6661 A. M. Clark—Communicated by the Davenport Glucose Manufacturing Co. Manufacture of starch, glucose, and other starch products. 2d

## XVI.—BREWING, WINES, SPIRITS, ETC.

1885.

6804 R. C. Sinclair and J. Hodson. Apparatus for effecting the turning of malt or other grain on the drying floors of kilns. 4d

## XVII.—CHEMISTRY OF FOODS, SANITARY CHEMISTRY, DISINFECTANTS, ETC.

1881.

12613 W. Donaldson, J. Shone, and E. Ault. The purification of sewage and other foul liquids, and apparatus therefor. 6d  
 12713 W. Gostwyck Gard. Manufacture of an improved disinfectant, deodoriser, and precipitant. 2d  
 12830 J. W. Slater. Preparation of agents to be used in the treatment of sewage and other liquid or semi-liquid putrescent or putrescible matters, etc. 4d.

1885.

6159 F. R. Conder. Improvements in the purification of water, which improvements are also applicable to other sanitary purposes. 2  
 7318 G. H. Ellis. Process for the economical production of a porous carbon for filtering, refining, decolorising, and deodorising liquids. 2d.

## XVIII.—ELECTRO-CHEMISTRY.

1881

12725 E. Marchese. Process for electrolytic extraction of copper from its ores. 4d

1885.

6991 W. P. Thompson—Communicated by E. H. Cowles and A. H. Cowles. Smelting ores by an electric current; and furnaces or apparatus therefor. 6d

## XIX.—PAPER, PASTEBOARD, ETC.

1881.

12385 W. Clark—Communicated by E. A. D. Guichard. Process and apparatus for bleaching waste-paper, whether printed or written on. 6d  
 12127 T. Koutledge. Boilers or digestors to be employed in the treatment of paper-making materials or for analogous operations. 4d  
 12566 A. Mitscherlich. Improvements in sizing of paper. 4d  
 13256 H. H. Lake—Communicated by W. J. Foley, U.S.A. Manufacture of paper, and machinery or apparatus therefor. 6d

1885.

1767 A. Behr. Apparatus and process for obtaining cellulose and glucose from wood and other vegetable matter. 6d  
 2722 C. D. Abel—Communicated by the Patent Papier Fabrik zu Penig, Germany. Manufacture of safety paper for cheques and similar purposes. 4d.  
 2723 C. D. Abel—Communicated by the Patent Papier Fabrik zu Penig. Manufacture of safety paper for cheques and similar purposes. 4d  
 7156 H. H. Lake—Communicated by J. Jordan. Treatment of paper-pulp, and apparatus or machinery therefor. 6d

## XXI.—EXPLOSIVES, MATCHES, ETC.

1881.

13109 G. A. Sweetser. An improved combustible composition to be employed in the manufacture of cigar lights or fuses. 2d  
 13176 G. G. André. Improvements in explosive compounds. 2d

## REPRINT.

3291 (1877) R. W. S. Griffith. Manufacture of gunpowder. 4d